It is useful to have a compendium of the different kinds of vegetation. SKW provides a valuable summary of the state of our knowledge and useful summary of one view of how many different kinds of vegetation we have. Its scholarship is impressive, but it is not the last word on how we should organize and understand the complexity of California vegetation. I can recommend buying the volume, but not the imposition of the system that it describes.

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Niebla and Vermilacinia (Ramalinaceae) from California and Baja California By Richard W. Spjut. Sida, Botanical Miscellany No. 14, Botanical Research Institute of Texas, Inc. 209 pp.

This monograph includes keys and descriptions for 71 North American species and one variety of *Niebla* and *Vermilicinia*, fruticose lichen genera, of which 53 species and the variety are new. These genera include highly polymorphic taxa that have been segregated from *Ramalina* sensu lato on the basis of vegetative anatomy and chemistry. *Niebla* sensu lato was proposed by Rundel and Bowler (1978) on the presence of medullary chondroid strands in most, abundant black pycnidia, and shared chemical features. *Vermilacinia* was segregated from *Niebla* sensu stricto by Spjut (1995), on the basis of distinctive secondary metabolites, and the lack of medullary chondroid strands and the reticulate surface ridging of *Niebla* sensu stricto. Included in *Vermilacinia* are species aggregates formerly called *Niebla combeoides* and *N. ceruchis*, while *Niebla* sensu stricto includes segregates from the former *N. homalea*. The many new species help to make sense of the highly polymorphic populations encountered in nature. About 2000 specimens were examined, mostly from the author's collections but also representing sizeable holdings from COLO, FH, US, and the C. Bratt private collection.

The North American distribution of the two genera is centered in the fog zone and Mediterranean California climate zone of the Pacific coast of California and Baja California, with some species extending as far north as San Juan Island, Washington, and a few others in South America, the Mediterranean, and Macaronesia. Twenty species of *Niebla* and 18 species of *Vermilacinia* are reported here for the United States. Those outside North America are not considered here.

Both morphologically based and chemically based keys are provided. The morphological key, while having some ambivalent dichotomies, is generally workable after some effort in learning how specific terms are used by the author. Detailed morphological descriptions are given for each species, as well as chemistry, distributions, and lists of representative specimens. Some species pairs apparently differ only chemically. Terminology is complex but explained in detail in a section of the text as well as in a glossary. A few terms still appear ambiguous: "glossy" versus "glabrous, creamy" surface, for example.

It is a pleasure to encounter a lichen monograph that contains numerous illustrations of the "plants", apart from those showing their internal structure and chemistry. There are 66 color photographs, most showing close-up views of individual organisms, but also several showing habitat. One or more excellent-quality black and white photographs with scale is provided for each species. Drawings included in the keys, however, are variable in quality. Maps show floristic provinces and collecting locations for each species. Many endemic taxa are included; endemics are rather unusual among lichens.

Richard Spjut has produced a workable treatise on two difficult genera of lichens, which have seemed intimidatingly polymorphic. He has brought together a useful compilation of the current status of information about *Niebla* and *Vermilicinia*, as well as on the climatic types, vegetation zones, and phytogeography of the regions

of interest. New range extensions in distributions of individual species are likely to be added for many taxa, particularly in the Channel Islands of California. Some of the chemical species may not be acceptable to all.

This monograph is essential for any lichenologist who collects or works with lichens of the Pacific coast of the Americas. It also is highly recommended to ecologists and systematists interested in desert and fog zones. The moderate price of the paperback makes this book accessible to nearly everyone, including students.

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California's Forests and Woodlands: A Natural History, By Verna R. Johnson. 1994. The University of California Press, Berkeley. x+222 pages. Hardcover $30. ISBN 0-520-08324-5.

The title, *California's Forests and Woodlands,* sounds, at first hearing, like one of those encyclopedic tomes that culminates a researcher's career. Perhaps that was hopeful thinking on my part (wouldn't it be great to have such a reference?), but this readable, 222-page book is closer in spirit and substance to *An Island Called California* (Bakker 1984). The book's stated purpose is "to bring hours of pleasurable, informative reading and an increased awareness of the priceless heritage of California's forests and their wildlife", and this it does quite well.

Johnston's book centers around conifers. This initially seemed odd to me, since I grew up in southern California, where oaks dominate, but Johnston argues that a) most of California's forests and woodlands are dominated by conifers, b) California has a great (unrivaled?) diversity of conifers, and c) oak woodlands and forests are already covered in the *Oaks of California* (Pavlik et al. 1991). In any case, conifers dominate the book's structure, which is organized around the different coniferous forests of California. Each chapter covers a different forest type, with topics including redwood forests, north coastal forests, mixed douglas-fir forests, closed-cone pines and cypresses, foothill woodlands, giant sequoia groves, upper montane and subalpine forests, and pinyon pines/juniper woodland. The intricacies of the Klamath region are segregated into their own chapter. Rounding out the book are an introductory chapter on identifying conifers and a concluding chapter on the ongoing conservation problems faced by California's forests and tips on how to get involved in the battle.

Each of the main chapters starts with the dominant conifers and works outwards, covering species ranges, associated plants, ecology, and the like, painting a picture of each forest and its ecological quirks. Animals are brought into the picture, so that the forests become populated with owls and rodents, insects, and reptiles. Vignettes follow, depicting interesting aspects of each forest's ecology (such as the Douglas-fir canopy ecology discovered by researchers at Oregon State). Interspersed with these vignettes are histories of these forests and observations from historical figures such as Muir and Nuttall, along with discussions of the environmental problems the forests